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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------------------------------------------------------------|-------------|----------------------|---------------------|------------------|
| 09/901,403 | 07/09/2001 | Guy M. Chemla | 3COM 3148-1 | 6471 |
| 22470 | 7590 | 03/29/2005 | EXAMINER | |
| HAYNES BEFFEL & WOLFELD LLP P O BOX 366 HALF MOON BAY, CA 94019 | | | CHO, HONG SOL | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2662 | |

DATE MAILED: 03/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|----------------------|------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 09/901,403 | CHEMLA ET AL. |
| | Examiner Hong Cho | Art Unit 2662 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1, 2, 6-13, 17-23 and 25-27 is/are rejected.
- 7) Claim(s) 3-5, 14-16 and 24 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 09 July 2001 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 09242001.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because it includes the title of the invention. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
3. Claims 1, 2, 6-10, 12, 13, 17-21, 23, 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Angle et al (U.S 6519225), hereinafter referred to as Angle in view of McAlpine (USPUB 20020141427).

Re claims 1, 12 and 23, Angle discloses switched backplane architecture of network device including a plurality of line cards, a fabric and a fabric configuration manager (*a system for distributed control of a communication switch, including a switch fabric and a plurality of switch satellites*, column 4, lines 10-15). Angle discloses line cards with interfaces to external communication channels and to the switch fabric

(column 4, lines 15-16; lines 20-24). Angle discloses a line card including a fabric input and output with queues (*maintain one or more ingress queues for ingress communications from the external communication channels to the switch fabric and one or more egress queues for egress communications from the switch fabric to the external communications channel*, column 4, lines 31-39; column 5, lines 4-5). Angle discloses a plurality of line cards with a fabric input coupled to the fabric configuration manager (*a plurality of arbitration logic units coupled with respective switch satellites, a particular arbitration logic unit in the plurality of arbitration logic units including logic to control an arbitration cycle for a given switch cycle*, column 4, lines 50-60). Angle discloses a fabric configuration manager receiving control information from the output ports identifying output ports having one or more output queues that have exceeded a predetermined threshold of pending calls (*a first stage in which performance parameters are gathered from other arbitration logic units in the plurality, the performance parameters indicating a status of the one or more egress queues maintained in the switch satellites coupled with the respective arbitration logic units*, column 6, lines 62-66).

Angle discloses each of the input ports communicating a transmit request for a particular output port (*a second stage in which bid data are propagated among the plurality, the bid data including a set of bids for use of egress queues during the switch cycle, the bids in the set including a destination identifier indicating a destination egress queue in one of the plurality of switch satellites*, column 7, lines 43-55). Angle does not disclose a pressure parameter indicating a result of a combination of the performance parameter of the destination egress queue with a condition of a source ingress queue. McAlpine

discloses a pressure function associated with the status of local and target queues (figure 11; paragraph [0076]). It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a pressure parameter of McAlpine into Angle so that an arbiter device selects one of the output queues for transmission based on a combined pressure parameter for enhanced arbitration by controlling congestion level at the congested ports.

Angle discloses forming request vectors based on transmit requests (a third stage in which a connection map based on the bidding is computed, column 7, lines 46-55). Angle discloses configuring a switch fabric based upon the connection map (*a fourth stage in which the switch fabric is configured based on the connection map*, column 8, lines 53-59).

Re claims 2 and 13, Angle discloses receiving a request from the input port pointed to by the priority indicator (*a pressure parameter is a function of priority parameter*, column 8, lines 42-48).

Re claims 6, 17 and 25, Angle discloses the switch fabric comprising a crossbar switch (column 4, line 42).

Re claims 7 and 18, Angle discloses control communication logic coupled with the switch fabric supporting communication among the plurality of arbitration logic units (column 4, lines 50-54).

Re claims 8, 19 and 26, Angle discloses control communication logic coupled with the switch fabric synchronizing communication among the plurality of arbitration logic units during an arbitration cycle (column 1, lines 25-28).

Re claims 9 and 20, Angle discloses control communication logic coupled with the switch fabric supporting communication of the connection map to the switch fabric from at least one of the plurality of arbitration logic units (column 7, lines 46-55).

Re claims 10 and 21, Angle discloses the performance parameter comprising a measure of backpressure (column 6, lines 62-66).

Claims 11, 22 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Angle in view of Magill et al (U.S 6343066), hereinafter referred to as Magill.

Re claims 11, 22 and 27, Angle does not disclose arbitration logic units supporting a source overload condition and reducing source bias by randomizing the order of the sets of bids. Magill discloses a global scheduler reordering the entry of assignment list to avoid overwhelming an output port (column 10, lines 23-30). It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a packet switching function of Magill into Angle so that the probability of buffer overflow at switch fabric contention points is reduced. The motivation is to avoid congestion at a contention port by switching packets at a smoothed rate.

Allowable Subject Matter

4. Claims 3-5, 14-16 and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. Claim 3, 14 and 24 are allowable over the prior art of record since the cited references taken individually or in combination fail to particularly teach or fairly suggest the plurality of arbitration logic units with configuration logic indicating a bid order, and the second stage of an arbitration cycle including a first arbitration logic unit in the order sending bid data to a next arbitration logic unit in the order, the next arbitration unit in the order consolidating and sending bid data to a next, and so on until the last arbitration logic unit in the order receives consolidated bid data, the bid data in the respective arbitration logic units being based on the gathered performance data and conditions of ingress queues maintained in the respective arbitration logic unit and any previous arbitration logic unit in the order. It is noted that the closest prior art of record, Angle shows a method of receiving performance parameters indicating the status of egress queues. However, Angle fails to suggest above claim limitation.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
- US Patent (6072772) to Charny et al
 - US Patent (6594234) to Chard et al
 - US Patent (6044061) to Aybay

Art Unit: 2662

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hong Cho whose telephone number is 571-272-3087. The examiner can normally be reached on Mon-Fri during 7 am to 4 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-3088.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

hc
Hong Cho
Patent Examiner
3-24-2005


JOHN PEZZLO
PRIMARY EXAMINER